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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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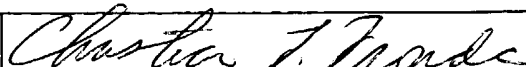
| | |
|------------------------|---------------------|
| Application Number | 10/006,909 |
| Filing Date | December 6, 2001 |
| First Named Inventor | Jay KEASLING et al. |
| Art Unit | 1645 |
| Examiner Name | Unassigned |
| Attorney Docket Number | 2000-0007 |

U.S. PATENT DOCUMENTS

| Examiner Initials* | Cite No. | Document No. | Issue Date or Publication Date | Name of Patentee or Applicant of Cited Document | Class | Subclass | Filing Date if Appropriate |
|--------------------|----------|--------------|--------------------------------|---|-------|----------|----------------------------|
| C22 | AA | 6,072,045 | 6/6/00 | Chappell et al. | | | |
| | AB | 6,114,160 | 9/5/00 | Croteau et al. | | | |
| | AC | 6,190,895 | 2/20/01 | Croteau et al. | | | |
| | AD | 6,281,017 | 8/28/01 | Croteau et al. | | | |
| | AE | 6,284,506 | 9/4/01 | Hoshino et al. | | | |
| | AF | 6,291,745 | 9/18/01 | Meyer et al. | | | |
| | AG | 6,306,633 | 10/23/01 | Wilding et al. | | | |

OTHER DOCUMENTS — NONPATENT LITERATURE DOCUMENTS

| Examiner Initials* | Cite No. | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T |
|--------------------|----------|--|---|
| C22 | AH | Altincicek et al. (2001), "GcpE Is Involved in the 2-C-Methyl-D-Erythritol 4-Phosphate Pathway of Isoprenoid Biosynthesis in <i>Escherichia coli</i> ," <i>Journal of Bacteriology</i> 183(8):2411-2416. | |
| | AI | Amann et al. (1988), "Tightly Regulated <i>tac</i> Promoter Vectors Useful for the Expression of Unfused and Fused Proteins in <i>Escherichia coli</i> ," <i>Gene</i> 69:301-315. | |
| | AJ | Barkovich et al. (2001), "Metabolic Engineering of Isoprenoids," <i>Metabolic Engineering</i> 3(1):27-39. | |
| | AK | Campos et al. (2001), "Identification of <i>gcpE</i> as a Novel Gene of the 2-C-Methyl-D-Erythritol 4-Phosphate Pathway for Isoprenoid Biosynthesis in <i>Escherichia coli</i> ," <i>FEBS Letters</i> 488:170-173. | |
| | AL | Campos et al. (2001), " <i>Escherichia coli</i> Engineered to Synthesize Isopentenyl Diphosphate and Dimethylallyl Diphosphate from Mevalonate: A Novel System for the Genetic Analysis of the 2-C-Methyl-D-Erythritol 4-Phosphate Pathway for Isoprenoid Biosynthesis," <i>Biochem. J.</i> 353:59-67. | |
| | AM | Cunningham et al. (1994), "Molecular Structure and Enzymatic Function of Lycopene Cyclase from the Cyanobacterium <i>Synechococcus</i> sp Strain PCC7942," <i>The Plant Cell</i> 6:1107-1121. | |
| | AN | Dairi et al. (2001), "Eubacterial Diterpene Cyclase Genes Essential for Production of the Isoprenoid Antibiotic Terpentecin," <i>Journal of Bacteriology</i> 183(20):6085-6094. | |
| | AO | Guzman et al. (1995), "Tight Regulation, Modulation, and High-Level Expression by Vectors Containing the Arabinose <i>P_{BAD}</i> Promoter," <i>Journal of Bacteriology</i> 177(14):4121-4130. | |
| | AP | Hahn et al. (1999), " <i>Escherichia coli</i> Open Reading Frame 696 Is <i>idi</i> , a Nonessential Gene Encoding Isopentenyl Diphosphate Isomerase," <i>Journal of Bacteriology</i> 181(15):4499-4504. | |
| | AQ | Hahn et al. (2001), "1-Deoxy-D-Xylulose 5-Phosphate Synthase, the Gene Product of Open Reading Frame (ORF) 2816 and ORF 2895 in <i>Rhodobacter capsulatus</i> ," <i>Journal of Bacteriology</i> 183(1):1-11. | |
| | AR | Hamano et al. (2001), "Cloning of a Gene Cluster Encoding Enzymes Responsible for the Mevalonate Pathway from a Terpenoid-Antibiotic-Producing <i>Streptomyces</i> Strain," <i>Biosci. Biotechnol. Biochem.</i> 65(7):1627-1635. | |
| | AS | Kaneda et al. (2001), "An Unusual Isopentenyl Diphosphate Isomerase Found in the Mevalonate Pathway Gene Cluster from <i>Streptomyces</i> sp. Strain CL190," <i>PNAS</i> 98(3):932-937. | |
| | AT | Kim et al. (2001), "Metabolic Engineering of the Nonmevalonate Isopentenyl Diphosphate Synthesis Pathway in <i>Escherichia coli</i> Enhances Lycopene Production," <i>Biotechnology and Bioengineering</i> 72(4):408-415. | |
| | AU | Kovach et al. (1994), "pBBR1MCS: A Broad-Host-Range Cloning Vector," <i>BioTechniques</i> 16(5):800-802. | |
| | AV | Kovach et al. (1995), "Four New Derivatives of the Broad-Host-Range Cloning Vector pBBR1MCS. Carrying Different Antibiotic-Resistance Cassettes," <i>Gene</i> 166:175-176. | |

Examiner
Signature

Date
Considered

4/29/04

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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|--------------------|----------|--|---|
| CJJ | AW | Mahmoud et al. (2001), "Metabolic Engineering of Essential Oil Yield and Composition in Mint by Altering Expression of Deoxyxylulose Phosphate Reductoisomerase and Menthofuran Synthase," <i>PNAS</i> 98(15):8915-8920. | |
| | AX | McAteer et al. (2001), "The <i>lytB</i> Gene of <i>Escherichia coli</i> Is Essential and Specifies a Product Needed for Isoprenoid Biosynthesis," <i>Journal of Bacteriology</i> 183(24):7403-7407. | |
| | AY | Oulmouden et al. (1991), "Nucleotide Sequence of the <i>ERG12</i> Gene of <i>Saccharomyces cerevisiae</i> Encoding Mevalonate Kinase," <i>Current Genetics</i> 19:9-14. | |
| | AZ | Polakowski et al. (1998), "Overexpression of a Cytosolic Hydroxymethylglutaryl-CoA Reductase Leads to Squalene Accumulation in Yeast," <i>Appl. Microbiol. Biotechnol.</i> 49:66-71. | |
| | BA | Rohdich et al. (2002), "Studies on the Nonmevalonate Terpene Biosynthetic Pathway: Metabolic Role of IspH (LytB) Protein," <i>PNAS</i> 99(3):1158-1163. | |
| | BB | Rohlin et al. (2001), "Microbial Pathway Engineering for Industrial Processes: Evolution, Combinatorial Biosynthesis and Rational Design," <i>Current Opinion in Microbiology</i> 4:330-335. | |
| | BC | Rohmer et al. (1993), "Isoprenoid Biosynthesis in Bacteria: A Novel Pathway for the Early Steps Leading to Isopentenyl Diphosphate," <i>Biochem. J.</i> 295:517-524. | |
| | BD | Sandmann (2001), "Carotenoid Biosynthesis and Biotechnological Application," <i>Archives of Biochemistry and Biophysics</i> 385(1):4-12. | |
| | BE | Szkopinska et al. (2000), "The Regulation of Activity of Main Mevalonic Acid Pathway Enzymes: Farnesyl Diphosphate Synthase, 3-Hydroxy-3-Methylglutaryl-CoA Reductase, and Squalene Synthase in Yeast <i>Saccharomyces cerevisiae</i> ," <i>Biochemical and Biophysical Research Communications</i> 267:473-477. | |
| | BF | Takagi et al. (2000), "A Gene Cluster for the Mevalonate Pathway from <i>Streptomyces</i> sp. Strain CL190," <i>Journal of Bacteriology</i> 182(15):4153-4157. | |
| | BG | Toth et al. (1996), "Molecular Cloning and Expression of the cDNAs Encoding Human and Yeast Mevalonate Pyrophosphate Decarboxylase," <i>The Journal of Biological Chemistry</i> 271(14):7895-7898. | |
| | BH | Tsay et al. (1991), "Cloning and Characterization of <i>ERG8</i> , an Essential Gene of <i>Saccharomyces cerevisiae</i> that Encodes Phosphomevalonate Kinase," <i>Molecular and Cellular Biology</i> 11(2):620-631. | |
| | BI | Wang et al. (1999), "Engineered Isoprenoid Pathway Enhances Astaxanthin Production in <i>Escherichia coli</i> ," <i>Biotechnology and Bioengineering</i> 62(2):235-241. | |
| | BJ | Wang et al. (2000), "Directed Evolution of Metabolically Engineered <i>Escherichia coli</i> for Carotenoid Production," <i>Biotechnol. Prog.</i> 16(6):922-926. | |

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| Examiner Signature | <i>Christa J. Zoude</i> | Date Considered | 4/29/04 |
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| SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i> | | Application Number | | 10/006,909 | |
| | | Filing Date | | December 6, 2001 | |
| | | First Named Inventor | | Jay KEASLING et al. | |
| | | Art Unit | | 1652 | |
| | | Examiner Name | | Christian L. FRONDA | |
| Sheet | 1 | of | 1 | Attorney Docket Number | 2000-0007 |

| U.S. PATENT DOCUMENT | | | | | | |
|----------------------|----------|--------------|--------------------------------|---|-------|----------------------------|
| Examiner Initials* | Cite No. | Document No. | Issue Date or Publication Date | Name of Patentee or Applicant of Cited Document | Class | Filing Date if Appropriate |
| BK | | 2003/0148416 | 8/7/03 | Berry et al. | | |

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| Examiner Signature | <i>Christian L. Fronda</i> | Date Considered | 4/29/04 |
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